

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of

Rural Call Completion

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WC Docket No. 13-39

**REPLY COMMENTS OF HYPERCUBE TELECOM, LLC**

HyperCube Telecom, LLC (“HyperCube”), by its attorneys, hereby files its Reply to the initial Comments on the *NPRM* in the above captioned proceeding.<sup>1</sup>

The initial Comments reflect that many parties are in broad agreement that the Commission should effectively address the root causes of call completion problems, rather than adopt data retention and reporting requirements. In its initial comments, HyperCube emphasized the need for the Commission to take certain action immediately, including adoption of call signaling integrity requirements, enabling carriers to direct connect with terminating incumbent local exchange carriers (“ILECs”) when traffic volumes warrant, promoting standards and (if required) adopting rules ensuring effective call signaling across mixed networks using diverse technologies, and encouraging rural ILECs to identify and address off-access tariff toll termination arrangements which can lead to call completion problems. HyperCube also supported the Commission’s continued exercise of its enforcement authority to address violations of its Rules that materially and adversely impact rural call completion rates. As

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<sup>1</sup> *In The Matter Of Rural Call Completion*, Notice of Proposed Rulemaking, WC Docket No. 13-39 (rel. Feb. 7, 2013) (“*NPRM*”).

detailed herein, many of the commenters lend further support to the measures advocated by HyperCube. HyperCube reiterates its call for the Commission to enact these measures swiftly and give them time to take effect before further considering whether there is a need for, and the scope of, any data collection effort.

## **I. CALL SIGNALING INTEGRITY**

HyperCube urged the Commission in its opening comments to adopt the one measure proposed in the *NPRM* to combat a specific source of rural call completion problems, namely inadequate call signaling integrity.<sup>2</sup> Other commenters joined HyperCube and voiced general support for the Commission to prohibit any provider in the call path from causing audible ringing (or other false progress messages) to be sent to the calling party before the terminating provider affirmatively signals the status of the called line and, when the called line is free, signals that the called party's device is being alerted to the incoming call attempt.<sup>3</sup>

A number of commenters would expand the Commission's proposal by having the agency adopt an express proscription against the insertion of signaling codes or messages not known by the provider to be accurate, such as false busy signals.<sup>4</sup> HyperCube agrees. Originating and intermediate providers must be permitted to convey upstream all audible tones,

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<sup>2</sup> See *NPRM* ¶ 41.

<sup>3</sup> See Comments of AT&T at 4-5 (supports narrow rules targeting "early altering to mask excessive post dialing delays or failed routing attempted" provided rules are clear what constitutes a violation); Comments of NARUC at 7 (call signaling integrity should be addressed, but FCC should also address problems of false busies and inaccurate messages indicating a call cannot be completed); Comments of COMCAST at 14-15 (supports FCC ring signaling proposal); Comments of Level 3 at 3 (same); Comments of NECA et al. at 23 (same). All references to Comments of a party in these reply comments refer to initial round comments in the above-captioned docket, WC Docket No. 13-39.

<sup>4</sup> See Comments of NARUC at 7 (supports prohibition of false busies and inaccurate messages generally); Comments of Level 3 at 3-4 (opposes all insertion of signaling codes or messages not known to be correct, e.g., busy signals when no answer after X number of rings).

messages, and any announcements sent by the terminating provider, or any downstream provider, and intended for the calling party. As a general proposition, signaling and messaging systems should be required to follow existing standards, or the successors thereof, and their use should not be permitted to mask inadequacies in routing, interconnection or facilities.<sup>5</sup> Each provider should be responsible only for the signaling or messages *that it inserts* into the call attempt stream, and any upstream providers should simply be required to pass upstream information received from downstream providers without liability.<sup>6</sup> At the same time, intermediate carriers should not have any affirmative signaling obligation beyond the foregoing requirements, such as independently alerting upstream providers of call status.<sup>7</sup>

In a related vein, Bandwidth.com proposes that where a call cannot be completed by an intermediate to a terminating provider, the “Commission should require the intermediate provider to return the call to the originating or preceding provider for call completion through an alternative route.”<sup>8</sup> HyperCube concurs. Once the intermediate provider returns the call upstream, the intermediate provider’s obligations regarding that call attempt should end since originating providers have the ultimate control and responsibility for the proper routing and completion of calls. Originating providers are in a position to eliminate any chronically-

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<sup>5</sup> Some commenters point to post dial delay as a source of call completion problems and suggest that carriers should be permitted to insert ringing to keep a caller on the line. HyperCube opposes any permission of false signaling as a solution to source problems that lead to rural call completion issues. *See also* Comments of AT&T at 4 (rule should prohibit “early altering” of signals). To be clear, HyperCube does not oppose as a matter of principle new types of signaling or messaging as long as the new methods undergo the same industry standardization process that previous messaging changes have had to endure, and which are incorporated in Telecordia and ATIS standardization documents.

<sup>6</sup> *Accord* Comments of AT&T at 4.

<sup>7</sup> *See* Comments of NECA at 23 (advocating that providers be subjected to an obligation to provide accurate indication of call status.). Any such obligation, if one is adopted, should fall on the *terminating provider* with intermediate providers simply being obligated to pass the information upstream in the form received.

<sup>8</sup> Comments of Bandwidth.com at 12.

ineffective IXCs and other intermediate providers from the call flow. In other words, there is little or no need for regulatory intervention against intermediate providers as the market will not reward those that fail to perform.

## **II. DIRECT CONNECTION**

In its initial comments, HyperCube renewed its position that all ILECs, including rural ILECs, should be required to enter into good faith negotiations for, and to establish, direct interconnection with requesting CLECs and interexchange carriers when traffic volumes warrant.<sup>9</sup> Several other commenters also made clear the need for direct interconnection with rural ILECs as an important key to combatting rural call completion problems.<sup>10</sup> Although some commenters propose that such direct interconnection should be required on an IP basis, HyperCube recognizes the difficulties faced by rural LECs as they endeavor to transition to IP networks. HyperCube therefore urges the Commission to require interconnection when justified by traffic volumes only in the format compatible with each rural LEC's network.

## **III. MANAGEMENT OF TRANSPORT BETWEEN DIVERSE NETWORKS**

HyperCube explained in its initial comments that standardization of signaling conversion methods between TDM-based and IP-based services, and between different IP-based services, is critical to ensure interoperability and meaningful interconnection arrangements for the exchange of traffic between carriers and service providers and to guarantee that end users will continue to receive high quality voice services, including satisfactory rates of call completion. HyperCube urged the Commission to adopt regulatory measures to support

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<sup>9</sup> Comments of HyperCube at 7-8. HyperCube explained that the threshold volume requirement should be the equivalent of four T-1s, regardless of underlying technology.

<sup>10</sup> Comments of IntelPeer at 7-9 (advocating for RLECs being required to permit direct connection with on IP-basis); Comments of Bandwidth.com at 10 (same).

effective call signaling across mixed networks using diverse technologies should tentative industry efforts toward standardization not yield results in a timely fashion.<sup>11</sup>

Numerous other commenters recognized that a significant source of call completion problems today – one not properly recognized in the *NPRM* – can be tied to the evolution of many networks to IP and the lack of clear standards governing the exchange of traffic across networks deploying diverse technologies. Bandwidth.com explains in detail that

[u]nlike the PSTN, the fact that there are no industry standards, databases, routing protocols and guidelines for calls originated or transported in IP to TDM is an important factor. There will invariably be significant issues and problems that arise due to the interaction between legacy TDM and IP technologies during the transition to IP-IP interconnection and all-IP networks. During this transition, the Commission should not expect service providers to attain traditional TDM call completion rates.<sup>12</sup>

Bandwidth.com observes further that “relatively stable and long-standing industry standards and practices that govern TDM technology traditionally used on the PSTN are ... being outstripped.”<sup>13</sup>

Other commenters also note the contribution to rural call completion difficulties that may be traced to the lack of standards as calls are carried between networks that are diverse technologically. USTelecom, for example, observes that the Commission should make a focus of its examination of rural call completion problems in an investigation into “whether the

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<sup>11</sup> Comments of HyperCube at 8-10.

<sup>12</sup> Comments of Bandwidth.com, Executive Summary at 1-2.

<sup>13</sup> Comments of Bandwidth.com at 4-5. Bandwidth.com notes further that “[t]he Commission cannot expect to maintain the reliability of the PSTN while tacitly endorsing widespread non-carrier experimentation without first establishing new standards and systems that include IP providers, IP technology, and new (or revised) routing databases.” *Id.* See also *id.* at 9 (“calls may fail due to the interfaces between IP and TDM, whether or not least cost routing is used in the call path. The ground rules and industry standards for the exchange of voice traffic between IP and TDM need to be established to ensure calls can be traced and completed.”)

increasing complexity inherent in the evolution of the voice network to a mixture of PSTN and IP networks is creating a problem with call completion.”<sup>14</sup> The reasons for call completion problems attending this evolution may be attributed, at least in part, to the absence of IP interconnection standards. HyperCube urges the Commission to make clear in a policy statement its expectation that standards apply to and between originating and downstream service providers and to take steps to oversee the industry’s development of IP-interconnection and call-quality standards in the absence of material industry programs toward such standards in the near future.

#### **IV. NONTRADITIONAL TERMINATION ARRANGEMENTS**

A potentially significant contributor to the Nation’s rural call completion problem may be unconventional, non-access based toll termination arrangements sometimes used to circumvent terminating carriers’ tariffs, as HyperCube explained in its comments.<sup>15</sup> As HyperCube observed, such arrangements may use retail services not intended for toll termination and are likely incapable, in many cases, of handling the volume of terminating calls the “providers” promise upstream providers they can carry. HyperCube called upon the Commission in its opening Comments to encourage rural ILECs to investigate for evidence of such practices being used to terminate traffic on their networks and to address situations that are found.

Several commenters echoed HyperCube’s concerns about such arrangements and their contribution to the rural call completion problems that end users may be experiencing today. Associated Network Partners, Inc. and Zone Telecom, Inc. (“ANPI”) expressed concerns about intermediate providers trying to “improve the economics of call termination to high cost

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<sup>14</sup> Comments of USTelecom at 6.

<sup>15</sup> Comments of HyperCube at 11-12.

rural areas by using low cost low quality means to deliver calls” such as bypassing access structures and using egress and ingress methods having no quality of service standards.<sup>16</sup> As Bandwidth.com explains, economic incentives exist for some providers to use “nonstandardized routing arrangements [that] go far beyond the common understanding of least cost routing,” by which some seek to avoid both IXC and ILEC facilities.<sup>17</sup> Bandwidth.com underscores the need for the Commission and rural ILECs, some of which have historically failed to perceive the problems because they rely on the traditional precepts underlying the PSTN and traditional access charge structures, to distinguish between legitimate and questionable intermediate provider activities:

[some] intermediate and terminating service providers attempt to bypass high rural LEC access rates by establishing and “advertising” unconventional call completion arrangements with limited capacity (such as using PRIs to complete calls that should be completed through access trunks). Intermediate providers that have sufficient capacity and different network designs experience fewer issues.<sup>18</sup>

Other carriers’ comments echo these concerns. CenturyLink, for example, when discussing the scope of the reporting obligations, also makes clear that the Commission, in examining where the sources of call completion problems lie, should focus on non-traditional non-facilities based providers involved in the termination of traffic.<sup>19</sup> These submissions and the more detailed attention HyperCube provided in its initial comments demonstrate the need to actively engage rural ILECs in identifying practices and “N-1” providers that contribute directly

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<sup>16</sup> See Comments of ANPI at 4-6.

<sup>17</sup> Comments of Bandwidth.com at 6.

<sup>18</sup> *Id.* at 9.

<sup>19</sup> Comments of CenturyLink at 13 (reporting, if adopted, should not focus only on facilities-based providers using the PSTN but also on non-traditional providers like YMax and Magic Jack).

to call completion problems through the use of non-traditional and ill-suited means to terminate calls to the ILEC serving the called number.

## V. CONTINUED USE OF EXISTING INVESTIGATIONS AND ENFORCEMENT

Numerous commenters, including HyperCube, urge the Commission to continue to actively use its investigations and enforcement authority as a principal means by which the Commission addresses violations that contribute to rural call completion problems rather than adopt new reporting requirements.<sup>20</sup> Many commenters describe the “evidence” in the *NPRM* regarding the frequency of call completion problems and the root causes as anecdotal or otherwise deficient, not justifying the proposed reporting requirements.<sup>21</sup> Verizon explains that its records show at least one-half of complaints related to call completion simply cannot be substantiated and that there are many reasons calls do not complete, far beyond the role intermediate carriers might on occasion play.<sup>22</sup> Verizon also notes that any perceived increase in complaints about call completion may be tied to the activities of some rural carriers that are now directing customers to file complaints rather than contact the rural carrier, which cuts out the traditional cooperative, self-regulating carrier-to-carrier efforts by which many call completion problems can be addressed.<sup>23</sup>

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<sup>20</sup> See Comments of HyperCube at 16-18.

<sup>21</sup> See, e.g., Comments of Verizon at 2-5 (the proposed rules are based on anecdotes; the nexus to least-cost routing is unclear and inadequately demonstrated); Comments of CenturyLink at 6-7 (information supporting the *NPRM* is largely anecdotal and the scope and cause of call completion issues are undefined in the *NPRM*); Comments of Sprint at 3-9 (averring that the RLEC call completion studies are problematic and have not been subjected to independent review); Comments of Time Warner Cable at 2, 4-5; Comments of VON Coalition at 7.

<sup>22</sup> Comments of Verizon at 5.

<sup>23</sup> *Id.* at 5. See also Comments of VON Coalition at 7 (“Rather than requiring companies to implement new, costly and complex data collection, reporting and retention requirements,



Rather than the Commission adopting a new across-the-board reporting obligation, these commenters contend that the Commission, at this time, should focus on enforcement of its existing rules and policies related to call blocking and call completion. As Time Warner Cable argues, the Commission has already shown it can address call completion issues caused by rule violations without adopting more requirements, and such efforts should be allowed to play out before the agency adopts a reporting requirement.<sup>24</sup> USTelecom urges the Commission to vigorously enforce existing policies and rules as they might affect rural call completion, and employ reporting requirements only in the context of enforcement actions where violators have been identified.<sup>25</sup> AT&T and the VON Coalition note that existing rules already prohibit telecom carriers and VoIP providers from blocking, choking, reducing, or restricting traffic, providing the Commission with enforcement tools to address call completion problems.<sup>26</sup> As these commenters and HyperCube argue, the Commission should decline to adopt complex and costly data collection, reporting, and retention obligations at this time and should instead rely on its enforcement authority and its ability to oversee industry standardization development.

## **VI. CONCLUSION**

For the foregoing reasons and those contained in HyperCube's initial comments, the Commission should take action in this and other proceedings to improve call signaling

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the Commission should give the industry an opportunity to self-regulate, backed by enforcement of existing rules.”).

<sup>24</sup> Comments of Time Warner Cable at 7-8 (investigations and enforcement under current rules can have a substantial deterrent effect). *Accord* Comments of Sprint at 22-24 (targeted enforcement actions and other measures, such as support of standards setting bodies, would be better than burdensome reporting requirements based on anecdotal and contradictory evidence).

<sup>25</sup> Comments of USTelecom at 6-7; *see also* Comments of COUC at 6 (Commission should focus on enforcing existing rules and policies).

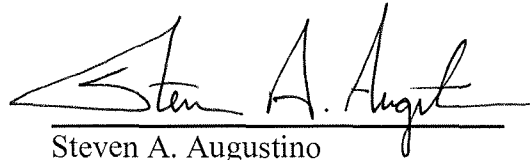
<sup>26</sup> Comments of AT&T at 2 (“enforcement of existing legal duties may be a more effective means [of addressing rural call completion problems] than broad rules” at this time); Comments of VON Coalition at 7.

integrity, to make available competitively-neutral direct interconnection with rural ILECs across diverse networks, to promote clear standards governing the exchange of traffic across networks deploying diverse technologies, and to encourage rural ILECs to investigate and address the use of inadequate non-traditional, off-access, call termination arrangements that may lead to call completion problems. The Commission should give these actions time to take effect before considering whether and what other measures might be appropriate, including reporting or recordkeeping obligations (whether broad and ongoing, or time-limited and targeted). In the interim, the Commission should address any specific matters that come to its

attention regarding Communications Act and rule violations that adversely impact rural call completion through its existing investigation and enforcement tools.

Respectfully submitted,

HYPERCUBE TELECOM, LLC

A handwritten signature in black ink, appearing to read "Steven A. Augustino", written over a horizontal line.

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